

Remarks/Arguments

In the Office Action dated June 24, 2008, it is noted that claims 1-9, 13-21, and 25-27 are pending, and that claims 1-9, 13-21, and 25-27 stand rejected under 35 U.S.C. §103.

By this response, claims 1, 2, 13, and 14 have been amended to clarify an aspect of the claimed subject matter; claims 7 and 19 have been amended to be dependent from independent base claims 1 and 13, respectively; claim 25 has been cancelled; claim 26 has been amended to change its dependency to claim 5; and claims 26-27 have been amended to conform the preamble in view of their base independent claim. No new matter has been added.

Cited Art

The following references have been cited and applied against the claims: U.S. Patent Application Publication No. 2003/0081547 to Ho (hereinafter referenced as “Ho”), and an article by Sai Shankar Nandagopalan et al. entitled “*QoS Signaling of Parameterized Traffic for IEEE 802.11E Wireless LANs*”, published in Volume 2402 on pages 67-83 for the First International Workshop of Advanced Internet Services and Applications (AISA) in Seoul, Korea on August 1-2, 2002 (hereinafter referenced as “Sai” rather than Nandagopalan in order to maintain consistency with the reference made to this article in the present Office Action).

Rejection of Claims 1-9, 13-21 and 25-27 under 35 U.S.C. §103

Claims 1-9, 13-21 and 25-27 stand rejected under 35 U.S.C. §103 as being unpatentable over Ho in view of Sai. Claim 25 has been cancelled. This rejection is respectfully traversed.

Claim 1 defines a hybrid controller (HC) and calls, in part, for:

“...responsive to a schedule change for one of the participating WSTAs, 106, 109 the SME 202 within the HC generates a request primitive for transmission to the MLME 201 within the HC.”

Claim 13 is a method claim including limitations substantially similar to those listed above for claim 1. For the sake of brevity and because of the similarity between the limitations in claims 1 and 13, the remarks below will be limited to claim 1. These remarks will be understood to pertain equally to the remaining independent claims.

As explained in the prior response, Ho appears to introduce the concept of traffic streams and the need to add, delete, and modify the streams with the support of QoS primitives. In paragraphs [0091]-[0092], Ho even mentions that the HC schedules transmission times. But at no time does Ho even remotely evidence an appreciation of the need to accommodate scheduling changes or that scheduling changes are to be effected by primitives requesting the schedule change. Instead, Ho simply offers that the HC adds, deletes, and modifies traffic streams to schedule the appropriate transmission times. Thus, Ho is not even aware of the possible occurrence of scheduling changes and the concomitant need to be able to handle scheduling changes, as addressed in Applicants' claims above.

Even though Ho appears to see a need to schedule transmission times in the first instance, Ho lacks any teaching or appreciation of the need for *"a request primitive relating to a schedule change for one of the participating WSTAs"*, as defined by Applicants in independent claim 1 (and corresponding method claim 13). Moreover, Ho lacks any teaching that *"the MLME 201 within the HC determines a result for the request primitive"* relating to the schedule change and that the MLME then *"generates a confirm primitive for transmission to the SME 202 within the HC"*, as defined by Applicants in dependent claim 7 (and corresponding method claim 19). Ho instead appears to propose that the initial scheduling of transmission times be handled by adding, deleting, and modifying the traffic streams at the HC. There is no mention of scheduling change in Ho. There are no request primitives relating to a schedule change proposed anywhere in Ho.

Sai was added to Ho because, according to the present Office Action at page 3, *"Ho doesn't teach specifically, wherein, responsive to receipt of a Schedule QoS Action frame at the WSTA, the MLME within the WSTA generates an indication primitive for transmission to the SME within the WSTA."* The Office Action then goes on to state that, *"Sai teaches in an analogous art, that wherein, responsive to receipt of a Schedule QoS Action frame at the WSTA, the MLME within the WSTA generates an indication primitive for transmission to the SME within the WSTA. (Pgs. 74-75: section 4.2)"*.

Even if the combination of Sai with Ho is considered to be proper, a proposition with which Applicants neither acquiesce nor agree, the above-recited limitations that are cited in the present Office Action as being taught by Sai are nowhere to be found in any of the independent claims, namely, claims 1, 7, 13, and 19. As a result, the present Office Action

has failed to state a prima facie case of obviousness. On this basis alone, the rejection should be withdrawn.

In spite of the lack of a prima case of obviousness being made for the combination of Sai and Ho, the differences between the claims and the combined teachings of Sai and Ho will be discussed below.

Sai appears to describe QoS signaling for a wireless network according to the IEEE 802.11e standard. MAC operations for QoS appear to be discussed at least in Section 4 of the reference at pages 74 and 75. MAC signaling, in particular intra-STA signaling, between the SME and MLME is described in Section 5 of the reference at pages 75-78.

According to Sai, a traffic stream may be added via a set of MAC service access point primitives. The request primitives described by Sai are discussed immediately below. The MLME-ADDTS.request primitive is *“sent by SME to MLME to initiate a stream management frame with specified parameters. This primitive requests addition or modification of a traffic stream.”* See Sai at page 76. The MLME-WMSTATUS.request is *“sent by SME to MLME to request the MLME for the amount of channel bandwidth available, channel status and the amount in use for QoS streams.”* See Sai at page 77. The MLME-SS-BW-QUERY.request is *“sent by SME to MLME to request the source QSTA to probe for the achievable transmission rate with the destination QSTA in the same QBSS.”* *Ibid.* In the section dealing with Inter-STA signaling, Sai discusses adding and modifying traffic streams in a manner similar to that described by Ho. In this regard, Sai appears to be cumulative to the teachings of Ho.

From a complete review of the Sai reference, it appears that Sai lacks any description of a primitive or protocol or process for generating a request primitive including a Schedule Element in response to a schedule change of a WSTA, as defined in the independent claims. These claimed limitations insure that a scheduling change for the WSTA is directly controlled from the request primitive by including the schedule element. Any teaching, showing or suggestion of these limitations is absent from the teachings of Sai and Ho.

Sai appears to teach adding a traffic stream, requesting a status of the medium, and determining the bandwidth for a sidestream. While Sai appears to apply primitives between SME and MLME to control the addition of streams and the probing for possible bandwidth, there is no disclosure relating to schedule changes or even responding to a request for a scheduling change for the wireless stations (WSTAs) in a network. There is no teaching,

showing, or suggestion in Sai or Ho to enable a person of ordinary skill in the art to develop a scheduling change process for a WSTA by using a set of primitives. Thus, it is believed that Sai and Ho do not teach or suggest the elements defined in claim 1 wherein, “*responsive to a schedule change for one of the participating WSTAs, the SME within the HC generates a request primitive for transmission to the MLME within the HC, and wherein the request primitive includes a Schedule Element.*”

It should also be noticed that the first author of Sai is, in fact, a co-inventor of the present invention. It can be attested to by the inventors that they have been involved in developing efficient protocols for the IEEE 802.11, and that the Sai reference reflects the status of their work as of mid-2002. It is the progress made in the second half of 2002 that resulted in the development of the present invention. While Sai does mention a scheduling entity (SE) on page 76 of the reference, Sai is silent as to the provisioning and operation of that scheduling entity. Thus, it can only be in hindsight using the disclosure in the present application that one can reasonably read the Sai reference and conclude that the claimed limitations involving scheduling changes are even remotely hinted at in the Sai reference. Such hindsight is improper in trying to establish a case of obviousness.

In light of the remarks above, it is believed that Ho and Sai fail to teach all the elements in Applicants’ amended claims. In view of these remarks and in light of the substantial similarity between the limitations in independent claims 1 and 13, it is believed that the elements of claims 1 and 13 and the claims dependent thereon would not have been obvious to a person of ordinary skill in the art upon a reading of Ho and Sai, either separately or in combination. Therefore, it is submitted that claims 1-9 and 13-21 are allowable under 35 U.S.C. §103. Withdrawal of this rejection is respectfully requested.

Conclusion

In view of the foregoing, it is respectfully submitted that all the claims pending in this patent application are in condition for allowance. Reconsideration and allowance of all the claims are respectfully solicited.

In the event there are any errors with respect to the fees for this response or any other papers related to this response, the Director is hereby given permission to charge any

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shortages and credit any overcharges of any fees required for this submission to Deposit
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Respectfully submitted,

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